

Attorney's Docket No.: 06618/406001

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Claims 1-6 (Canceled).

7. (Currently Amended) A process for making a catalyst ink for a fuel cell, comprising mixing, at room temperature, components comprising water, particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, an ionomer which has a property of improving ion conduction, and a catalytic material including platinum and ~~another material~~, ruthenium which are randomly spaced and uniformly mixed.

8. (Previously Presented) The process of claim 7, wherein the particles have a surface area of about 5 to about 10 m²/g.

9. (Currently Amended) The process of claim 7, wherein the catalytic material comprises substantially 60% platinum and 40% ruthenium Pt.

10. (Previously Presented) The process of claim 7, wherein the fluorocarbon polymer is selected from the group consisting of polytetrafluoroethylene polymers and fluorinated ethylene-propylene polymers.

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11. (Canceled)

12. (Previously Presented) The process of claim 11, wherein the ionomer comprises a liquid copolymer of tetrafluoroethylene and perfluorvinyletherosulfonic acid.

13. (Currently Amended) A process for making an electrode assembly for a fuel cell, comprising:

(a) providing a catalyst ink comprising water, particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, an ionomer which has a property of improving ion conduction, and a catalytic material including platinum and another catalytic material, which are randomly spaced and uniformly mixed; and

(b) preparing a substrate of carbon fiber paper, by adding fluoro-carbon polymer to the carbon fiber paper; and

(b) (c) applying the catalyst ink at room temperature to at least one side of a said substrate.

14. (Currently Amended) The process of claim 13, wherein the substrate is a membrane has said fluorocarbon polymer as 5 wt %.

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15. (Previously Presented) The process of claim 14, further comprising roughening the side of the membrane prior to applying the catalyst ink.

16. (Previously Presented) The process of claim 15, wherein the side of the membrane is roughened by contacting the membrane with an abrasive selected from the group consisting of silicon nitride, boron nitride, silicon carbide, silica and boron carbide.

17. (Previously Presented) The process of claim 16, wherein the abrasive has a grit size of about 300 to about 400.

18. (Currently Amended) A process for making a membrane electrode assembly for a fuel cell, comprising:

(a) providing a catalyst ink comprising particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, an ionomer which has a property of improving ion conduction, and a catalytic material including platinum and another catalytic material, randomly spaced and uniformly mixed;

(b) applying the catalyst ink at room temperature to at least one side of a membrane; and

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(c) bonding the membrane to at least one electrode and using said membrane as a cathode of a direct methanol fuel cell.

19. (Previously Presented) The process of claim 18, further comprising roughening the side of the membrane prior to applying the catalyst ink.

20. (Currently Amended) A fuel cell comprising a membrane electrode assembly, wherein the membrane electrode assembly is made by the process of:

a) providing a cathode having a membrane, a catalyst ink comprising particles of a fluorocarbon polymer with a particle size of 1 to 4 microns, an ionomer which has a property of improving ion conduction, and a catalytic material including platinum and another catalytic material, which are randomly spaced and uniformly mixed;

(b) applying the catalyst ink at room temperature bonded to at least one side of the membrane; and

(c) bonding the membrane to at least one electrode; a solid polymer electrolyte membrane, bonded to said cathode, and an anode bonded to said solid polymer electrolyte membrane, said anode, cathode and solid polymer electrolyte membrane collectively forming a membrane electrode assembly.

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21. (Previously Presented) A fuel cell as in claim 20, wherein said applying further comprises roughening said at least one side of the membrane prior to applying the catalyst ink.

22. (Previously Presented) A process as in claim 18, wherein said applying comprises roughening said one surface prior to applying the catalyst ink.

Kindly add the following new claims:

23. (New) A process as in claim 7, wherein said the ionomer is Nafion configured as an ion conducting material.

24. (New) A process as in claim 13, wherein said ionomer is Nafion configured as an ion conducting material.

25. (New) A process as in claim 18, wherein said ionomer is Nafion configured as an ion conducting material.

26. (New) A fuel cell as in claim 20, wherein said ionomer is Nafion configured as an ion conducting material.